Applicant

For

Randy L. Walter
AIRPORT MAP DISPLAY SYSTEM AND DATA INTERCHANGE

METHOD

Atty. Docket No. Express Mail No. SMI33 P-305 EV021497360US

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10 **11C** 13A HUD 13B **PROCESSOR EFIS** NDB **MEMORY** 11B MMR 16 RAM ROM **XPNDR** 17 12 12A CMU 18 19 19 12B

FIG. 1

MCDU

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100 FOR

LABEL

RESOLUTION

RANGE

DATA

WORD #

.00017 DEG .00017 DEG .00017 DEG .00017 DEG

20 BITS 20 BITS

20 BITS 20 BITS

LONGITUDE POINT 2

LONGITUDE POINT 1 LATITUDE POINT 2

LATITUDE POINT 1

2

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State State and State State State State

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	8	00 LONGITUDE POINT 2	20 BITS	20 BITS .00017 DEG	PATH
	11	CONIC SUBTENDED ANGLE	12 BITS	12 BITS .0439 DEG	300 FOR
	11	CONIC RADIUS	15 BITS	15 BITS .0078125 nm	MOD TAXI
	11	CONIC INITIAL ANGLE	12 BITS	12 BITS .0439 DEG	PATH
10	00	00 LATITUDE POINT 3	20 BITS	20 BITS .00017 DEG	040 FOR
1	00	00 LONGITUDE POINT 3	20 BITS	.00017 DEG	TAXIWAY
	•	•			300 FOR
	00	00 LATITUDE POINT 1	20 BITS	20 BITS .00017 DEG	RUNWAY
N + 1	10	10 LONGITUDE POINT 1	20 BITS	20 BITS .00017 DEG	

WORD SS	DATA	RANGE	RESOLUTION	LABEL	
01	01 LATITUDE	20 BITS	.00017 DEG	104 FOR RUNWAY IDENT	
00	00 LONGITUDE	20 BITS	.00017 DEG	004 FOR RUNWAY IDENT	
00	00 TEXT (3 ASCII)	7 BITS EACH	•		
10	10 TEXT (3 ASCII)	7 BITS EACH	*****		

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1. Δ Lat = (Lat - Ref Lat) ×Earth Radius 2. Δ Lon = (Lon - Ref Lon)×Cos ((Lat + RefLat)/2)

z. Grunse = Arctan (∆Lon/∆Lat)

F. Distance = $Sqrt(\Delta Lat^2 + \Delta Lon^2)$

5. Scale = Distance ×10

New Lat = Ref Lat + Scale×Cos(Course)/Earth Radius 9

New Lon = Ref Lon + Scale×Sin (Course)/ (Earth Radius×Cos ((Ref Lat + New Lat)/2)

F1G. 4

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